

TRICKS and Tips

Part of the power of OS/2 is the depth and breadth of user customization options. You can exploit—or ignore—most parts of the operating system depending on your needs, preferences, and interest in learning what's under the hood. The command-line fanatic can run the whole operating system from a series of key strokes, while the GUI enthusiast can make everything just a mouse click away. The potential is endless.

That's why some of us cringe when some folks complain about OS/2's rigidity and unfriendliness when it's clear that many of their complaints could be overcome with a little customization. But it's hard for many OS/2 users, who are probably already busy enough, to take the time to learn a new operating system and how to tune it to their tastes. And even the most experienced OS/2 user doesn't know *all* the tricks.

That's why we're presenting our second-annual collection of OS/2 Tips. With the help of some of our regular writers and contributing experts, we've assembled our favorite hints and suggestions—all to make OS/2 work the way *you* want it to. The following pages will give you examples of tips that make OS/2 work better and the work you do with it easier.

Let us know what you think, or send us your favorite OS/2 tips: You'll find us at os2mag@mfi.com, or 71154,676 on CompuServe. Prefer hard copy? Write to Tips, OS/2 Magazine, 600 Harrison St., San Francisco, CA 94107, or fax (415) 905-2499. (P.S.: We've even included a page of tips for our favorite Windows 95 users. We hope you find it useful!)

Config.sys Tips by David Moskowitz

Before we begin, backup your *config.sys* file—especially if you're going to experiment with tuning your system.

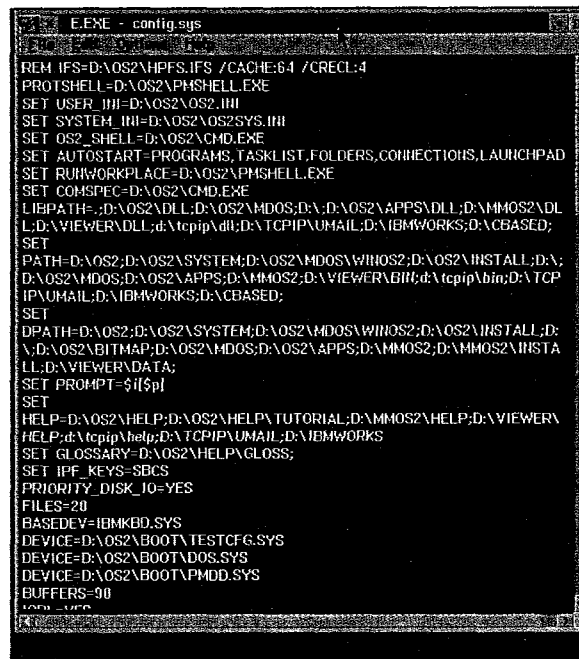
1 Make *config.sys* readable. The second thing you might want to do is add to your *config.sys* file's readability. Add as many blank lines as you like, or add comments on any line, as long as it's prefaced with the letters *rem* (for "remark").

You can convert most of *config.sys* to lower case to make it easier to read. Be careful! Some vendors install case-sensitive environment variables that might not work properly if you arbitrarily change the case of the entire file. One notorious example is Borland International's BRIEF text editor.

2 Create a floppyless workstation. To purposely disable floppies, remove the corresponding *basedev* statement from your *config.sys*. For ISA and EISA systems, remove the line that reads *basedev=ibm1flpy.add*. If you have a Microchannel PC, remove the line that reads *basedev=ibm2flpy.add*.

Since *config.sys* is read after your OS/2 PC boots up, this trick won't keep the system from booting from the floppy drive, it merely renders the floppy useless while OS/2 is running.

3 Stop applications from restarting. If you don't want applications that were running when you closed the sys-



tem to restart when you reboot, add the following to your *config.sys*:

```
RESTARTOBJECTS=X
```

where X is NO to prevent all objects from restarting or *STARTUPFOLDER-ONLY* to only restart objects in the startup folders (yes, you can have more than one).

4 Suppress application error codes. If you don't want to see the application errors pop-ups (usually something that reads "Line xxx SYS3175 Error") add the following line to your *config.sys*:

```
suppresspopups=x
```

where x is the drive in which you want OS/2 to place the information (note, this statement does not contain a colon). Similarly, if you want to create a dump of the program that failed add the line *dumpprocess=x* (same format—you don't have to use the same disk drive).

5 Improve CD-ROM performance. If you have a CD-ROM drive installed your system, modify the IFS line that installs CD-ROM support to read something like

```
ifs=c:\os2\boot\cdfs.ifs /q /c:4.
```

The magic cookie is the last parameter /c that increases the cache size for the CD-ROM drive. For some drives with a small (less than 256K) or missing cache, a larger cache size can improve performance. The default value is 2 if you don't add the parameter (128K cache) and the value shown increases to 256K.

6 Load DOS device drivers after you boot. Unless you need DOS device drivers in every DOS session, do not load them in *config.sys*. This approach wastes valuable memory that could be used for application execution. It is better to load needed device drivers in the *dos_device* setting for DOS or Windows Program objects.

7 Force *chkdsk* at boot time. If you want to force *chkdsk* on some or all disk drives, prefix the appropriate drive letter in the auto-check parameter with a plus sign when you boot your system. For example, if the IFS line reads:

```
ifs=c:\os2\boot\hpfs.ifs  
/cache:1024 /crecl:64  
/autocheck:c fghi
```

and you want to force a *chkdsk* for drives F and H, change the parameter to:

```
/autocheck:c+f g+h i
```

Similarly, if your FAT diskcache line

reads:

```
diskcache=512,lw,32,ac:demno
```

to force **chkdsk** on E and M, change the parameter to:

```
ac:d+e+mno
```

Swap and Cache Tips by David Moskowitz

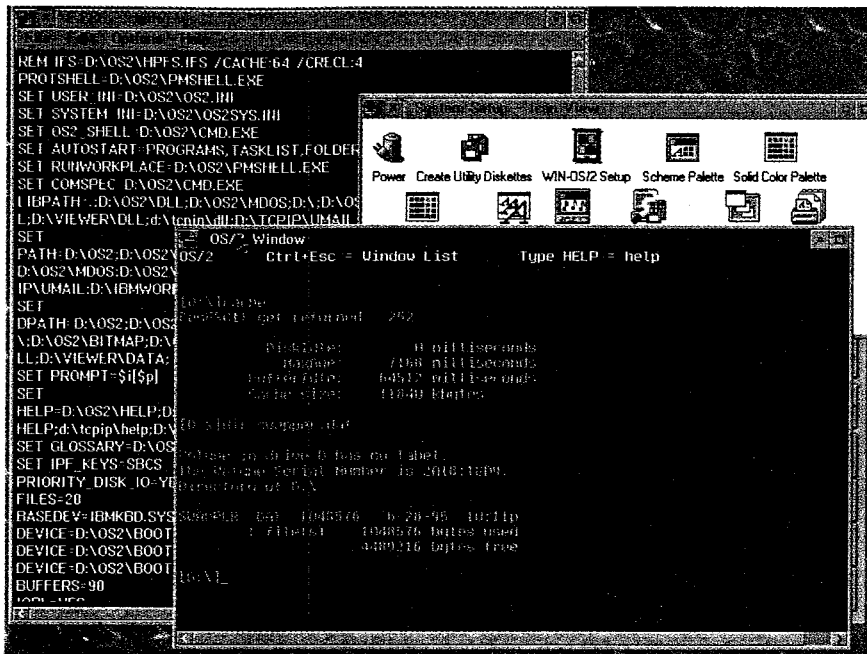
8 Increase the swap file's initial size. If your swap file is on an actively used FAT partition, the chances are good that as this FAT disk become fragmented, your swap file will also become fragmented. A badly fragmented swap file can have a serious impact on performance. One solution is to change the initial swap file size. Locate the **swappath=** statement in **config.sys**.

There are three possible parameters for this statement; the first is the location of the swap file, the second is the amount of space to reserve on the swap disk, the third is the initial swap file size. For example, **swappath=g:\ 20480 30720** tells the system to place the swap

file in the root directory of drive G:, start warning the user they are running out of swap space when less than 20MB is available on the drive, and start the

swap file at 30MB.

9 Determine the swap file's best initial size. How big should you make



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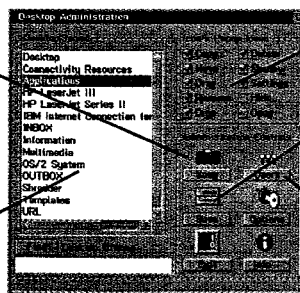
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the initial swap file? It depends on how big your swap file grows. There are a few tools you can use to determine the maximum swap file size. The easiest is *dinfo*, one of the IBM Employee Written Software programs available on CompuServe's OS2USER forum in Library 13, and on the Internet in *hobbes.nmsu.edu/os2* in the *ibm/ews* directory as *dinfo.zip*. Use *dinfo* to record the maximum sized attained since booting the computer. After you've used *dinfo* for a couple of days (to get some idea of an average) set the *swappath* parameter accordingly.

10 Put the swap file in the best location. The default location (in the *\os2\system* directory on the boot disk) is usually not the best location for the swap file. Instead, place the swap file in the most frequently used logical disk drive. If you have more than one physical hard disk, place the file in the least frequently used physical hard drive.

Why? Disk access is slower than RAM. Any time the system uses the

swap file, everything slows down. If the file is fragmented, disk access is slower. If the disk head is in constant use in another partition, it takes time to move the head to the partition that contains the swap file.

11 Enable the lazy-write cache. Both HPFS and FAT partitions work faster with a cache. HPFS is designed to work with a "lazy-write" cache. Don't disable it (/lazy=on for HPFS—on the IFS line; and LW parameter on the diskcache line for FAT). With the lazy-write enabled, the system optimizes disk writes to cause minimal impact to applications by postponing writing if the system's really busy. System performance can improve by almost 20 percent by enabling lazy-write.

If you're wondering, "What happens if there is a power failure and data is still in the cache," consider that a sudden power failure is always a potential disaster, regardless of cache state. If the power failure occurs while the disk write is in progress, you stand to lose not

only this data but the entire file. If power failures are a concern, we suggest leaving lazy-write enabled and install an uninterruptible power supply.

12 Small disks or low RAM means FAT. If you have less than 8MB RAM, or you have a small hard disk (smaller than 128MB), you should probably use only one file system, and we recommend FAT. As the hard disk size increases, HPFS makes more sense. For truly fast disk access with large partitions use HPFS (IBM isn't kidding about High Performance).

13 Tune the cache size carefully. Tuning the cache's size is a balancing act between optimal disk access and optimal program execution. Memory used for a disk cache is taken away from applications, and can increase swapping, while memory used for applications is not available for the disk cache, and may slow down disk access.

If you're using only one file system and have 8MB RAM, start by allocating a roughly 512K cache. Add 512K for

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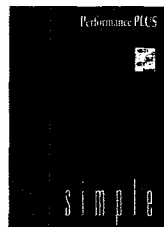
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each additional 4MB RAM. If you use both HPFS and FAT, start with 512K for the primary (most used) file system and 256K for the secondary. Use the same rule for adding cache based upon memory for the primary and add 256K to the secondary file system cache for each 4MB RAM.

Once you've made these adjustments in your *config.sys* file (the first parameter on the *diskcache* line for FAT and the */cache:* parameter on the *IFS* line that installs HPFS), monitor system performance. If your swap file size grows, increase the initial allocation. If performance suffers, decrease the amount of RAM used for caching.

System-Tuning Tips By David Moskowitz

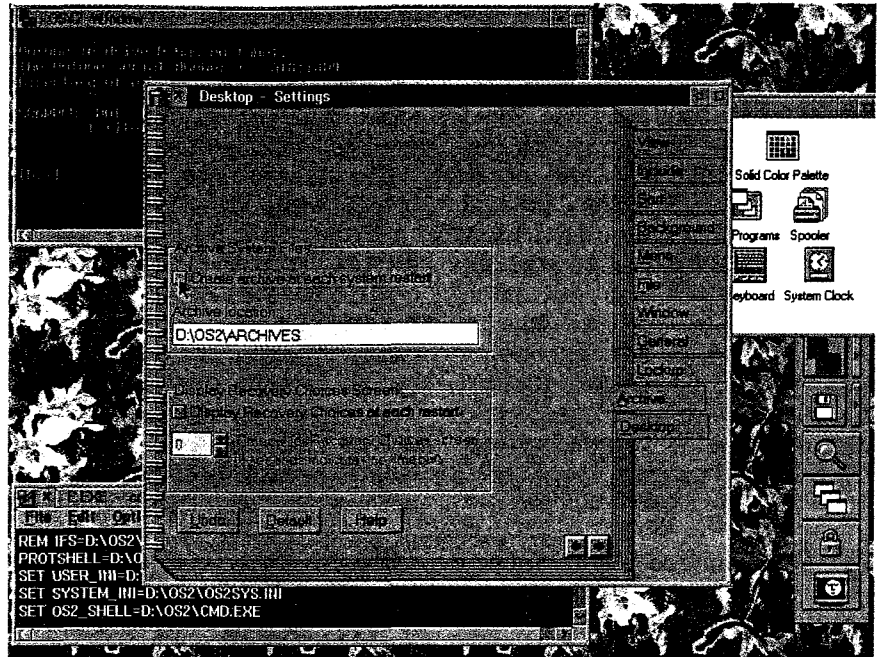
Here are some tricks to improve your OS/2 system's performance.

14 Remove fonts you don't use. To decrease boot time, first check to make sure you need the fonts you have installed. Many people install additional fonts beyond those installed

automatically by OS/2. Since OS/2 takes the time to check each installed font every time you boot your PC, you'll save boot-up time by using the font palette

to remove the extra ones.

15 Think about Fast Load vs. Fast Boot. If you have Fast Load



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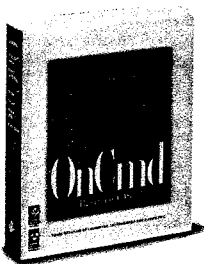
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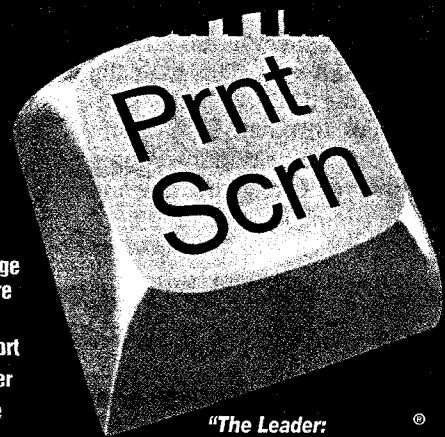
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enabled in the Win-OS/2 Settings object, your system starts Windows every time you boot up. While this speeds future loading of Windows applications, it slows boot time. If you don't run Windows applications very often, you'll speed up boot time by turning off Fast Load.

16 Do you really need archives?

Another desktop setting that affects boot time is located on the Desktop Settings Archive page. If “Create Archive on boot up” is checked, OS/2 will create an archive of the current desktop including critical files (OS/2 .ini files, *config.sys* and user-specified files) every time you boot up. Instead, enable the desktop archive feature after you’ve made changes to your configuration that you want to preserve, then reboot your system. After the system boots, disable this setting.

17 **Close unneeded applications.** I still remember the call from the person who wanted to know why OS/2 was *soooooo slow*. As it turns out, he had more than 100 open DOS sessions. By closing the unused sessions (all but two!) system performance dramatically improved.

18 If you're OS/2-only, use **protectonly**. If you don't use DOS and Windows applications, change the **protectonly** statement in *config.sys* to read **protectonly=yes**. This frees the low 640K for use by OS/2 applications. Once you make this change, you won't be able to run DOS or Windows applications until you change the line and reboot your computer.

19 **deldir** also deletes performance. The **deldir** setting, which copies deleted files to a safe area in case you change your mind, seriously affects performance. The **deldir** environment variable set within *config.sys* or a specific command-line session provides some degree of protection against accidental file erasure. However, many file system operations will take longer. Instead of enabling this facility, it might be better to purchase a set of utilities that provide an undelete command.

20 Upgrade weak hardware links first. A certain order

should be followed in upgrading hardware to improve performance. In general, if you want to speed up application execution, add memory. If you want to speed up the display, upgrade or add a video accelerator. No matter how fast the rest of your system is, if you have a slow display, you might not see or perceive any impact from other tuning measures. If you want to speed up disk operations, add a caching controller. If you want to speed computation, upgrade your processor.

Enhanced Editor Tips

by Bill Schindler

The OS/2 Enhanced Editor (EPM) gets a bad rap. Granted, EPM initially seems unfriendly, but with a little bit of customization, you'll discover it to be a flexible, easily modifiable tool. Despite quite a few excellent alternatives, EPM remains my primary editor.

21 Enable the “edit ring.” This allows more than one file to be loaded in the same edit session. Choose Options, Preferences, Ring enabled, then Options, Save Options to make the setting permanent. <F11> and <F12> will let you move through the files in the ring.

22 Work with an OS/2 shell inside EPM.

the ability to work with an OS/2 shell inside the editor. If you enter **shell** in the command dialog, EPM will start an OS/2 command session right within the editor. (If the edit ring isn't turned on, starting the shell will automatically enable it.)

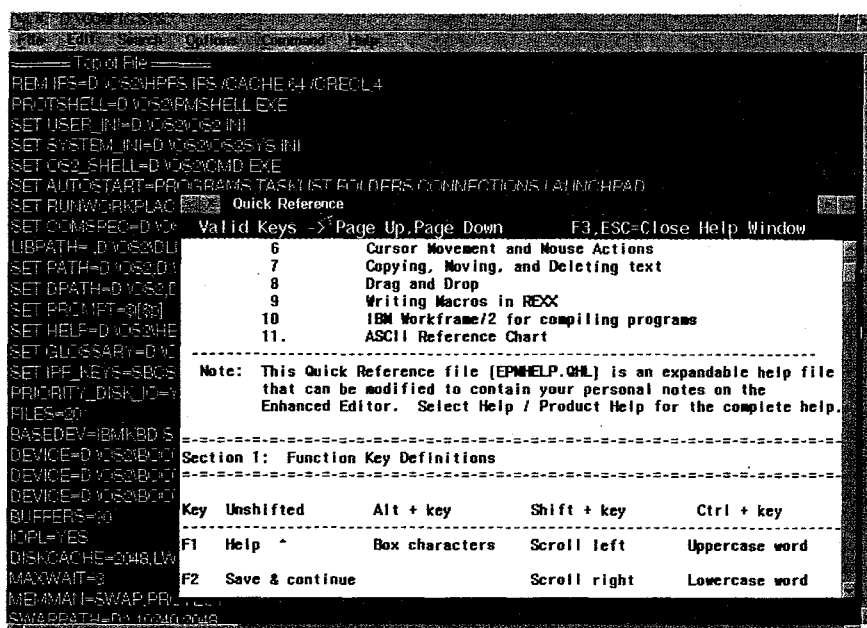
Most programs that you'd run from the command line, such as compilers and REXX programs, run just fine within this shell. If you position the cursor on a prior command and press <Enter>, that command will be executed again. The shell is editable and scrollable.

23 Use DIR to edit multiple files.

If you want to edit several files, type `dir` to get a directory listing. Position the cursor on a file and press `<Alt+1>`. The file will be loaded into the Edit ring, as if you'd typed in the name by hand.

24 Use file-loading shortcuts.

With the ring enabled, <F8> brings up the Add File window. To load another file that's in the same directory as the current file in your edit ring, type an equal-sign and the file name. For example, with *c:\config.sys* in the edit window, typing **=autoexec.bat** will load that file from the *c:* directory. Typing **=.bak** will load a file of the same name but different extension (*c:\config.bak*). To reload a file you've edited before, scroll through the list window with the cursor keys, and press <Enter>



on the highlighted file name.

25 **Bypass the Search dialog.** EPM has powerful search capabilities, but the Search dialog doesn't remember earlier searches. So, if you have three complex changes to make over a series of files, you'd have to type them over and over again in the Search dialog. Instead, use the command dialog and use a Change command. The syntax is:

```
c /old text/new text/ *
```

The optional asterisk tells the editor to change the value throughout the file without confirmation. For example,

```
c /water/beer/ *
```

will improve any file immeasurably. The command is then stored in the command history, and can be recalled with cursor keys.

26 **Create changes with embedded slashes.** Any non-blank

character you type after the *c* to begin the Change command is used to delimit the old-text and new-text fields. So, if either the old-text or new-text includes a slash, just choose another letter.

```
c \windows\os/2\ *
```

is another favorite file improvement.

27 **Change non-keyboard characters.** Sometimes you need to change a value that contains characters that aren't accessible from the keyboard. You could find a character chart and use <Alt+keypad> to enter the characters in the change command, but here's another way. Find the first occurrence of the "funny character," and type <Ctrl+L>. EPM will copy that line into the command dialog; edit the dialog to turn it into a Change command, and away you go.

28 **Save commands to a file.** Another way to execute a series of frequently used commands is to save them in a file. Import the file to the

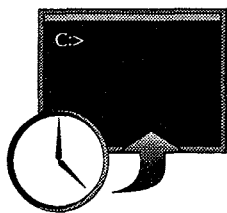
beginning of the file you'll want to massage, block mark the lines, and press <Alt+=>, which executes the current line or marked text as EPM commands.

29 **Create an EPM REXX macro.** If you use a series of EPM commands often, create an EPM REXX macro. Put a */** comment at the beginning of the first column of the first line, and save the file with a *.erx* extension, such as *h2o2beer.erx*. For ease of access, save the file in the directory listed in the *epmpath* in your *config.sys*. Enclose each command in single or double quotes. To run the macro against the current file, type *rx h2o2beer* (the extension isn't necessary) from the command dialog. REXX and EPM are well integrated, so if you like one, take the time to learn the other.

Basic <Alt+F1> Tips by David Reich

OS/2 Warp has taken some ideas and concepts that were implemented as renegade functions in prior versions and polished them up. One example,

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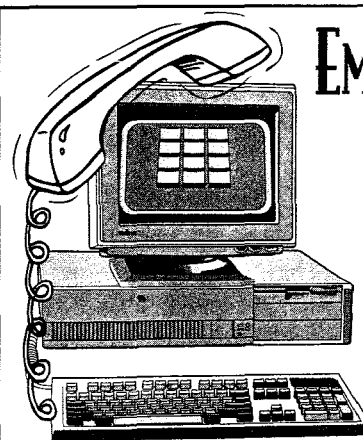


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<Alt+F1>, is a key combination that can change the way OS/2 boots up.

30 <Alt+F1> under OS/2 2.x. In OS/2 2.0, 2.1, and 2.11, you could recreate a default Workplace Shell desktop by pressing and holding the <Alt> key along with <F1> as soon as the computer completed its power-on self test (POST), or as soon as you acknowledged the Boot Manager menu. As a result of <Alt+F1>, the system would recreate your Workplace Shell desktop as it was immediately after you installed the system, and replaces *config.sys* with the one in the \os2\install directory.

31 <Alt+F1> under OS/2 Warp. When you boot up an OS/2 Warp system, immediately after the POST or when the Boot Manager menu disappears, you will see a white box with "OS/2" next to it in the upper left corner of the screen. If, while you see this box, you press <Alt+F1>, the system will display an archive retrieval/maintenance menu. On this menu you have several choices:

- <Esc> continues booting from the current *config.sys* file and the current Workplace Shell desktop configuration.
- C moves you to an OS/2 command prompt, where you can copy or move files, manually restore files, or edit your current *config.sys* file using the new text-mode *tedit.exe* editor.
- M brings up a maintenance desktop from which you can perform other operations.
- V resets your video configuration to standard VGA. This option is useful if you have problems with your video configuration or if you change video cards and need to install the new video driver.
- X restores an archive of your desktop, if you have created one.

32 Look inside *altf1.cmd*. This command provides a great deal more functions than the simple <Alt+F1> in prior versions of OS/2, which was not even documented. Not only is this function now available, but it is extendible and configurable.

To begin with, this menuing system works with several files that reside in the

\os2\boot directory on your boot drive. The first is *altf1.cmd*, which is the command file that gets called when the menu is displayed and the keystrokes previously described are pressed. When you look at *altf1.cmd*, you will notice that it is a straight DOS-like batch-command language file, and not a REXX program file. This early in the process, the REXX interpreter and functions are not available. Here is the code inside *altf1.cmd* that handles pressing of the letter V:

```
rem
rem if a v or V is passed, call setvga
rem
if v==%1 goto setvga
if V==%1 goto setvga
```

33 Look inside the *alt1x.scr* files. The other three key files used by <Alt+F1> are *altf1bot.scr*, *altf1mid.scr*, and *altf1top.scr*. These three files contain only text and, as the names imply, make up the menu screen you see when you press <Alt+F1> at the right time. The screen is divided into thirds for the purpose of this menu, and each file represents one third. You can view them by using the TYPE command or by using a text editor. Note that these files only contain the text that appears on the menu and, whether or not you put new menu choices in the text, it has no

effect on which letters will be accepted as input. By simply changing the text in any one of or all the .scr files, you can customize what you see when <Alt+F1> is pressed. The default contents of *altf1top.scr* are shown in Listing 1.

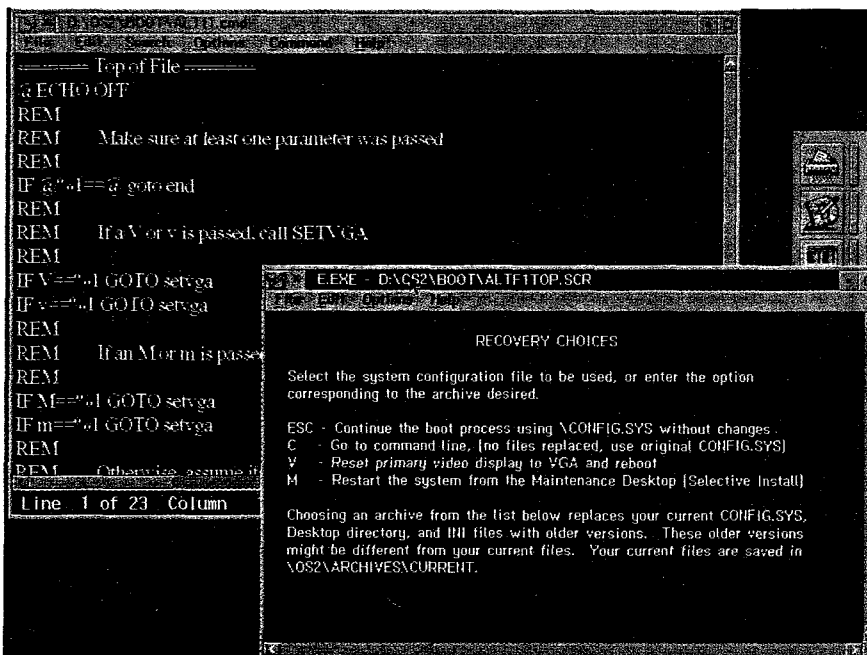
Customizing <Alt+F1> Tips

by David Reich

34 Remove <Alt+F1> menu choices. To remove some or all of the menu choices in *altf1.cmd*, simply edit them out of the appropriate .scr file. To avoid a user accidentally selecting a (formerly) valid choice and the system taking the default action, make sure to edit the appropriate part of *altf1.cmd*.

35 Add new menu choices. It would be a reasonable assumption to think that, if you added new text for new choices in the .scr files and added checks for other letters pressed in *altf1.cmd*, that would be it. Sorry! The OS/2 system designers have set it up so that *altf1.cmd* is only called when you press V, C, M, or X. However, you can add new menu choices for other letters by setting up files called *config.x* or *altf1x.cmd*, where *x* represents those other letters.

36 Use *config.x* to set up alternate configurations. Say you



Listing 1: Default contents of *altf1op.scr*

```

C:\OS2\BOOT\ES>
Select the system configuration file to be used for booting
(option corresponding to the hardware configuration).
<Esc> continue the boot process using default configuration
changes.
C   Go to command line. (no files replaced, use of CONFIG.SYS)
V   Reset primary video display to VGA and reboot.
M   Restart the system from the Maintenance Partition (Active
Install).

Choosing an archive from the list below replaces your
current CONFIG.SYS, Desktop directory, and INI files with
older versions. These older versions might be different
from your current files. Your current files are saved in
\OS2\ARCHIVES\CURRENT.

```

have a laptop computer that has a token ring LAN PCMCIA card in it. When you start your system on an airplane or in a hotel room, you are obviously not connected to the LAN and you will get LAN errors.

The solution: Make a different *config.sys* file for traveling called *config.a* (where *a* means "away," perhaps) without the LAN drivers. This *config.a* file must be stored in the *\os2\boot* directory of your boot drive.

After you've built *config.a*, update one of the *.scr* files with the indicators to press A when traveling. Then, while traveling, press <Alt+F1> during the boot process, and select A to boot using the special configuration.

37 Add menu choices with *altf1x.cmd*. Creating new menu choices isn't limited to custom *config.sys* files; you can also make custom *.cmd* batch files. If you create a file called *altf1x.cmd*, where *x* is any letter (other than the V, M, C, or X already defined by the system), pressing that letter at the <Alt+F1> menu will execute that command file.

So, in this case, you could update the *.scr* file(s) with text indicating letters for which you have command files. Note that these command files must also reside in the *\os2\boot* directory of the boot drive.

Unlike custom *config.x* files, the system will *not* continue booting automatically after your custom *altf1x.cmd* file is executed. To continue the boot sequence, you'll need to manually press <Esc>. I recommend that you end the

altf1x.cmd file by displaying a prompt to the user requesting that they press <Esc> to continue booting.

38 Customize OS/2 archiving functions. The OS/2 Archiving functions can also be customized. A file in the *\os2\archives* subdirectory of your boot drive can be modified for just this purpose. This file, *os2.key*, contains the names of all of the files to be archived (in addition to the *\desktop* directory structure on your boot disk) when you select to archive your system. Using the same format, you can add your own favorite files to this list. The format of the lines in the file are:

```
keyfile:c:\config.sys
keyfile:c:\startup.cmd
```

and so on, where *keyfile* is the operational keyword, followed by the path and file name to be archived. So, for example, if you wanted to save *ibm-lan.ini*, you would add:

```
keyfile:c:\ibmlan\ibmlan.ini
```

at the bottom of the file.

Emergency Preparedness Tips by David Moskowitz

Accidents happen! You can prevent total destruction and loss if you plan ahead, know what to do, and know where to look.

39 Learn the three important rules. The three most impor-

tant rules of emergency preparedness are Backup, Backup, and Backup. Another way to think about it is "Backup early and often."

40 Power protection is more than a UPS. It's a good idea to keep AC-powered desktop PCs connected to an uninterruptible power supply (UPS). If the UPS doesn't regulate voltage, be sure to add a voltage regulator. Don't forget to put a surge suppressor on the phone lines—that's an easy way for lightning to get into your system.

41 Don't use DOS backup software. Do *not* use a DOS backup program to backup your OS/2 system. The DOS application doesn't know anything about OS/2's Extended Attributes, does not save them, and without the EAs, the tape may be useless.

42 Keep backups of key system files. Even if you have tape backup—and especially if you don't—you should back up several files each time they change. They'll all fit onto a single floppy disk. These files include *config.sys*, *startup.cmd*, *autoexec.bat*, *os2init.cmd*, *os2.ini*, and *os2sys.ini*. If you use Windows programs, don't forget *system.ini* and *win.ini*.

43 Find a missing *country.sys*. Sometimes OS/2 refuses to boot, and displays an error message saying it can't find *country.sys*. That message might lead you on a wild-goose chase. Here's what it *can* mean:

- The file really is missing. Check your *config.sys* for a line similar to *country=001,c:\os2\system\country.sys*. If the file is in the specified directory, check the problems listed next. If it isn't there, restore it from floppies (it will be on installation floppy disk 1).
- The *config.sys* file itself is missing. Either restore your backup or reboot using <Alt+F1> and restore the most recent desktop archive.
- You have an interrupt conflict. Use *rmview* to determine if there is a conflict. The solution is to adjust the hardware.
- If you have a tape drive attached to the floppy or hard disk controller without an appropriate device dri-

ver, disconnect the device or install its special driver.

If none of these suggestions work, try removing the hard disk base device driver (`basedev=ibm1s506.add` in `config.sys`) and substitute `basedev=ibmibt12.i13`. The system will run slower, but you should be able to get by this problem.

44 **Solve DOS print problems.** Sometimes DOS applications, including terminate-and-stay-resident (TSR) programs refuse to print under OS/2. That's often because they try to capture all INT 17 interrupts—and OS/2 won't allow them to. If you know it's a problem with that particular DOS program (because other DOS programs will print), the solution is to load the special OS/2 supplied device driver `lptdd.sys`.

The best way to load this driver is using the `dos_device` setting for the Program Reference object that causes the problem. Add the following to the entry field for the object (changing the drive letter, if necessary) to `c:\os2\mdos\lptdds.sys`.

45 **Make DOS applications print.** If your DOS applications won't print until the session ends, load `lptdd.sys`. With this driver loaded, the <Ctrl+Alt+PrtScrn> key sequence forces the job to print without closing the DOS session.

46 **Reset the Desktop password.** `Makeini` is an OS/2 command that creates the special binary `.ini` files from readable text files. The syntax of this command is:

```
makeini binary_ini_file.ini
source_text_file.rc
```

The most common use for this command is to reset the desktop password. Reboot your PC and use <Alt+F1> to get to a command line. Type the following:

```
makeini os2.ini lock.rc
```

When you reboot your computer, it will no longer have a desktop password.

LIBPATH Tips by David Reich

Libpath is an important environment

variable in OS/2. Just as `path` specifies where OS/2 should look for programs, `libpath` tells OS/2 where to search for dynamic link libraries (DLLs), which are common pieces of program code used by many programs, including OS/2. The `libpath` states not only where to search for DLLs, but also in which order to search these directories. This ability can be important when several DLLs have the same name in your system, or if different programs need specific versions of a particular DLL.

Under OS/2 Warp, the `libpath` statement is now dynamically modifiable. It gets around arbitrary problems in OS/2 2.x having to do with its fixed length, and the user's inability to modify the `libpath` after booting.

47 **Get around the 256-character libpath limit.** First of all, the limit on the `libpath` statement is really 1,024 characters, not the 256-character limit imposed by most text editors.

If you have a text editor that doesn't force lines to be shorter than 256 characters (many word processors avoid this limit, but don't forget to save `config.sys` back as a plain text file), your standard `libpath` statement can be 1,024 characters long.

48 **Avoid the current-path default problem.** When OS/2 2.0 appeared, IBM introduced the `;` argument to `libpath` as a default. The single period `.` refers to the current directory, so, because OS/2 placed it as the first argument to `libpath`, when any program needs to load a DLL and does not specify where to load it from, the first place searched would be the current directory. That's good—unless you don't want the current working directory to be the first place searched. Fortunately, by using a new OS/2 Warp setting, `beginlibpath`, you can tell OS/2 to look around *before* using DLLs in the current directory.

49 **Use beginlibpath to add directories.** The most obvious way to use `beginlibpath` is to type:

```
set
beginlibpath=x:\wherevr;y:\another\dir;
```

at an OS/2 prompt to pre-append the

`libpath` with these directories for that specific session. When you use this method, the change is for that single session only, and when you close that session, the changes are gone. The same exists for the `set endlibpath` statement, which specifies directories to be searched after the contents of the regular `libpath`.

50 **Cancel out beginlibpath.** To remove directories specified in `beginlibpath` from the DLL search tree, just type:

```
set beginlibpath=
```

to erase the current `beginlibpath` string. The same goes for `endlibpath`. If you have several directories in either and you want to remove only one, you must retype the string without the directory.

51 **Make libpath completely dynamic.** Now that we've covered the obvious, there are some things that can make this functional enhancement interesting. Since you can't change the `libpath` specified in `config.sys` at run time, why not replace it with a `beginlibpath` string instead, which you *can* change?

Change the `set libpath` statement in `config.sys` to read `set beginlibpath` instead. When you reboot, your entire `libpath` is in the `beginlibpath` environment variable, and you can modify it as you like at any time on a per-session basis.

52 **Use endlibpath, if you prefer.** Note that our use of `beginlibpath` is arbitrary; you could choose to use the `endlibpath` variable instead.

Resource Manager Tips by David Reich

The Resource Manager was introduced in OS/2 Warp to assist both you and OS/2 in identifying, keeping track of, and managing the hardware resources in your computer. The Resource Manager is part of the operating system device-driver processing and has associated code in the OS/2 device drivers. When you start your OS/2 system, the hardware devices are examined to determine what is there to allow many different configurations and assist you in

Table 1: Detailed description of reserve.sys parameters

Parameter	Format	Sample	What it does
/IO	/IO:x,y	/IO:340,4	This reserves I/O ports. The first number is the base port address in Hex, followed by the number of ports to be reserved.
/DW	/DW:x	/DW:10	Decodes the width of the I/O address. The allowable values are 10 and 16. This switch is only valid in conjunction with /IO.
/P			Performs the same function as /IO
/MEM	/MEM:x,y	/MEM:4000,1000	This reserves memory addresses. The first number (x) is the base memory address in Hex with the assumption of offset 0. The second number (y) is the length of memory to be reserved, in decimal.
/DMA	/DMA:x	/DMA:2	Reserves DMA channels. x is the DMA channel to be reserved in decimal.
/IRQ	/IRQ:x	/IRQ:13	Reserves an IRQ level. x is the IRQ level to be reserved in decimal.
/EXC	/EXC	/EXC	Indicates exclusive resource attribute.
/MUL	/MUL	/MUL	Indicates multiplexed resource attribute.
/SHA	/SHA	/SHA	Indicates shared resource attribute.

managing the system.

53 Use **rmview**. **Rmview** is Resource Manager's user interface, which lets you see which hardware is installed and how it's configured. **Rmview**'s syntax isn't in the documentation, and can be seen in Figure 1. All the parameters are optional. If no parameters are entered, **rmview** defaults to the physical view (/P):

/P Display the physical view. If no parameters are entered, this view is the default. The physical view displays the physical components in the system, such as adapters, along with the resources claimed by the physical components.

/P1 Display the physical view with planar chipset devices.
/D Display the device drivers registered with the Resource Manager along with the physical resources and logical devices they claim.
/D1 Display the device drivers with planar chipset devices.
/L Display the logical view of the system resources.
/R Display raw data. When this switch is used with /P, /P1, /D, /D1, or /L, the Resource Manager data is displayed in a lower-level format.
/IRQ Display the claimed interrupt levels (IRQ), sorted by value.
/IO Display the claimed IO ports above 100 Hex, sorted by value.
/IOA Display all claimed IO ports, sorted by value.
/DMA Display the claimed DMA channels, sorted by value.
/MEM Display the claimed memory regions, sorted by value.
/SO Display /IO, /IOA, /IRQ, /DMA, /MEM, sorted by owner.
/HW Display the hardware tree. The hardware topology of the system is displayed.
/? The help text is displayed.

Reserve.sys Tips by David Reich

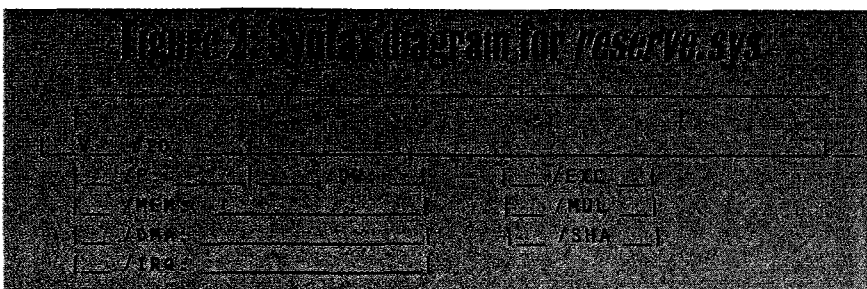
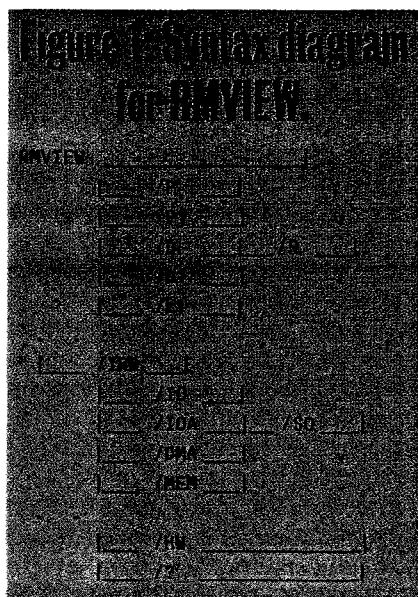
Reserve.sys is an installable device driver that helps Resource Manager produce more accurate reports. It should be used in conjunction with the Resource Manager in two separate scenarios.

54 When to use **reserve.sys**. You'd use **reserve.sys** if you are using a device driver that is not Resource Manager-aware (from sources other than IBM, for example). If you know the resources (such as memory addresses, DMA, and so on) that the device driver uses, you can use **reserve.sys** to reserve those resources so that Resource Manager-aware device drivers will try to gain access to them.

If you have a piece of hardware that does not tolerate its resources being examined, you can reserve those resources by telling Resource Manager to keep away from it.

55 How to use **reserve.sys**. To use **reserve.sys**, place the following statement as your first line in **config.sys**:

```
basedev=reserve.sys
<parameters>
```



The syntax of *reserve.sys* isn't documented and is diagrammed in Figure 2. The parameters are described in Table 1. The format of these parameters are a bit involved, and are hardware dependent.

Only one resource attribute (/EXC, /MUL, or /SHA) is allowed per resource entry and, if no attributes or decode width is set, the default is /EXC with a width of 16.

For example, if you want to reserve IRQ 13 Exclusive, DMA 0 multiplexed, memory CA00:0 for 1,024 bytes shared, I/O ports 340 for 10 ports exclusive and a decode width of 10, this would be the line you add as line 1 in *config.sys*.

```
basedev=reserve.sys /irq:13
/dma:0 /mul /mem:ca00,1024
/sha /io:340,10 /dw:10
```

Hardware settings that are set with jumpers or in CMOS are not changed by the operating system. Some device drivers that are not Resource Manager-aware may need to claim ports, addresses, and so on rather than allowing these Resource Manager-aware drivers to see what is available and go after them. Some devices don't like being probed.

IBM Works Tips by Lou Miranda

The great thing about IBM Works is that it gives you a reasonable amount of power with an incredibly easy interface—and you can't complain about the

price, since it's included in the BonusPak of all versions of OS/2 Warp 3.0 (at least, so far). If you can figure out drag-n-drop, you've pretty much mastered Works.

56 Move an appointment. Want to reschedule today's meeting for tomorrow? Just drag the meeting in the Appointment Book to tomorrow (just remember that you have to select it first with the left mouse button before you can drag it with the right one). Want to schedule a meeting with a coworker? Drag her name from your Contact List to your Appointment Book. Works will even fill in her name and phone number for you.

Drag-n-drop works equally well in Works' other modules. Want to put that chart in your word processor document? Just drag it there, and it'll be updated whenever you update the chart.

57 Use Drag-n-drop for mail merge. Drag a Contact List to a word processor document, and Works will automatically do a mail merge and print or fax the results when you drag the document to your printer or fax object. The first tab in the Settings Notebook of every Works document is a Merge page, which lets you print automatically whenever you drag a name onto it.

58 Start PIM modules by using shadows. It's easy to figure out

that you can launch the word processor by just double-clicking on a document object. But the PIM doesn't have any data objects, so what's the easiest way to start the various PIM modules? Easy: Place a shadow of the Monthly Planner in your Startup Folder. Then, to start any other module, just right-click on the planner (outside of the grid area) and select Launch from the menu. Then, just choose which module you want to view. In fact, you can right-click on any of the PIM modules and find the Launch option.

59 Configure the PIM to dial your phone. Want to customize the PIM? Just right click on one of the modules and choose Launch, Preferences. Up pops a preferences notebook, just like a Settings notebook. Click on the Phone Book tab and you can configure your modem so Works can dial phone numbers for you automatically. If you fill in your local area code here, it'll strip that off your phone numbers before dialing.

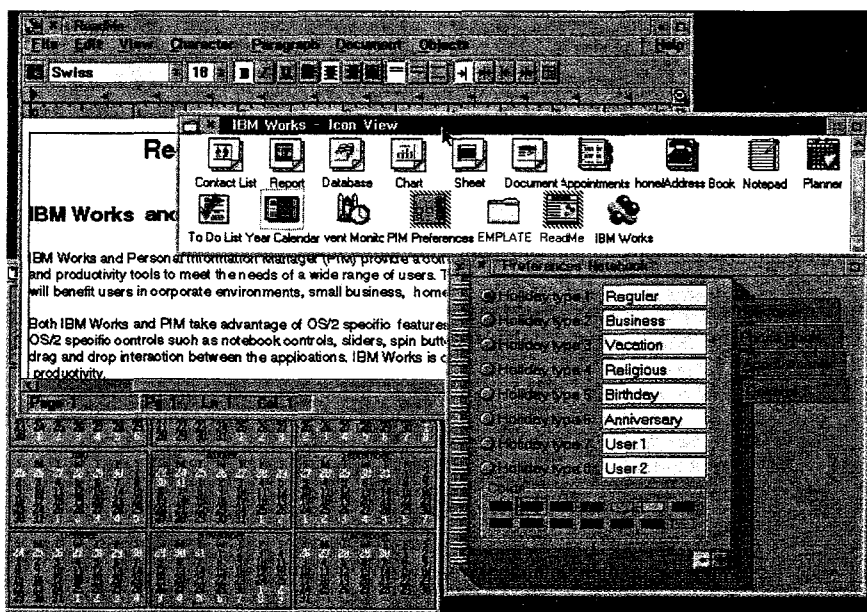
60 Define your own user labels. On pages two and three of this notebook, you can define your own User Labels. For example, type in Internet Address in User Label 1. Now, when you open the Phone Book and select the Custom 1 tab, you'll see "Internet Address" as the first field.

You can customize the rest of the user labels by CompuServe address, Relationship (family, friend, client, prospect, or whatever), and even have a check mark for Holiday List.

61 Turn off the Event Monitor. Ever wonder what the Event Monitor that appears in your Window List is? It's a program that's automatically loaded whenever you open one of the PIM modules. It keeps checking for a date/time alarm that you've set up in the Appointment Book.

If you don't use the Works PIM to set appointments, you might want to stop Event Monitor from consuming system resources. Click the General tab in the Preferences notebook, and unselect Autoload Event Monitor.

62 Change the working-hour defaults. If you work the night shift, you can use the Appointments tab



in the Preferences notebook to change the starting and ending time for your workday.

63 Download the bug fix. If you plan on using the PIM for important information, I suggest you download the bug fixes for Works. Currently, a beta version is available on the Internet at the Hobbes site. The final fixes may be out by the time you read this article.

Internet Access Kit Tips by Alexander Antoniadis

Once you've set up the Internet Access Kit, you can make a number of small enhancements to get the most out of OS/2 while surfing the net.

64 Update your IAK. When you start using OS/2 Warp's Internet Access Kit (and every few weeks after that), it's good practice to use the Update Software icon to ensure you have the latest version of all Internet applications.

For some reason, IBM moved the Update Software server's address. If your version of OS/2 Warp was released earlier, you'll see an error message or a simple listing that says "Welcome."

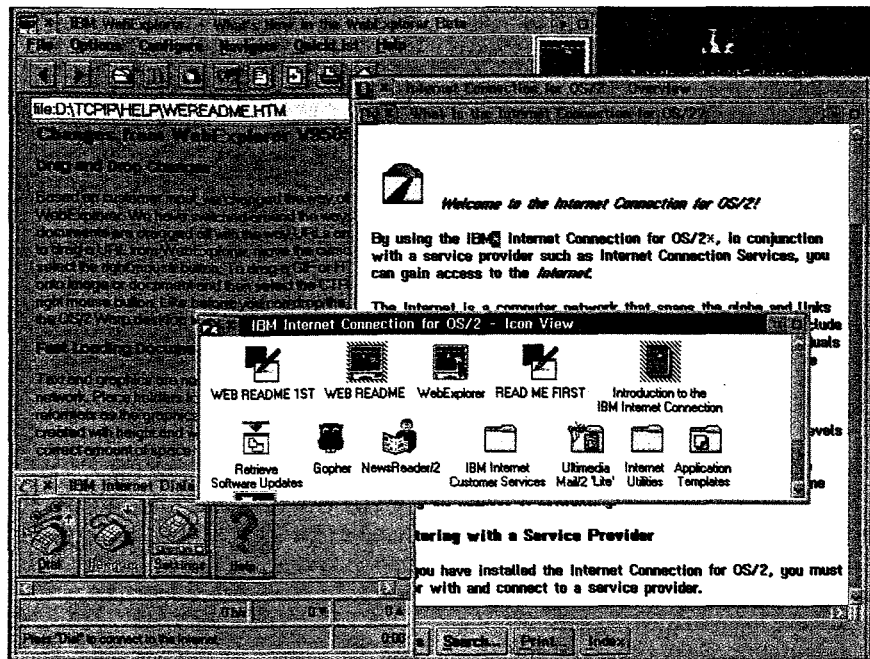
Open up the Update Software Settings Notebook and change the parameters after the /h from *updates.gopher.ibm.com* to *ftp.ibm.net*.

65 Change WebExplorer defaults. If you're like most Internet surfers, you'll be using the World-Wide Web browsing tool, WebExplorer. Two options you should set in the Parameters field in WebExplorer's Settings Notebook are:

/q which eliminates the opening logo and confirmation on exit.

/t x where x is the number of pictures to load at once (the maximum is eight, the default is four). You want to tune this for best performance, depending on the speed of your Internet connection.

66 Use WebExplorer's drag-n-drop. One of the most overlooked features of the WebExplorer is its ability to interact via drag-n-drop. However, the latest WebExplorer available at press time (1.02) has changed the



behavior slightly.

With older versions, any picture on a Web page can be saved by right-click dragging the picture into the Workplace Shell. The HTML-formatted source file can be similarly saved by drag-n-drop anywhere else.

With WebExplorer 1.02 (and presumably all future releases), you can still drag pictures, but you have to hold down the <Ctrl> key to drag the HTML source. Without holding down <Ctrl>, the drag-n-drop creates a URL object that can be dragged into the WebExplorer to load that Web page. It makes a handy pointer.

67 Use WebExplorer as a file viewer. Any file that can be read by the WebExplorer (including text, HTML, BMP bitmaps, and GIF files) can be viewed by dragging it into WebExplorer's main window.

68 Keep up to date with IAK newsgroups. Having problems with the Internet Access Kit, or just want to keep up with new developments? Use NewsReader/2 (or your favorite off-line reader) to read the newsgroups most closely relating to the IAK. The best place to monitor is *comp.os.os2.networking.tcp-ip*. It's the main OS/2 Internet area, where most tools are discussed and IAK bugs are reported. A new group, *comp.os.os2.mail-news*, covers OS/2's Internet mail-

er and news readers.

69 Find Internet tools on the Internet. Check out the growing list of OS/2 Internet tools in one of the many places specializing in OS/2 software:

The OS/2 Internet Apps Web Page is at <http://www.phoenix.net/~vccubed/os2apps.html>. Next, try the LEO (Link Everything Online) OS/2 archive at http://www.leo.org/archiv/os2/index_grouped.html. Be patient, since this site is in Germany. And last, but definitely not least, is the Hobbes site, *hobbes.nmsu.edu*, and its mirrors.

Free Software Tips by Esther Schindler

BBSs and online services can be like flea markets; if you search the contents long enough, you can find a few real bargains. Happily, the quest will produce a treasure trove of OS/2 applications that won't cost you a cent. Nobody has written a free desktop publishing package yet, but several useful applications and utilities are available. Here are some of the best we've found.

70 Check out IBM employee-written software. Among IBM's best-kept secrets is its collection of free Employee Written Software (EWS). Apparently, IBMers can't make money from writing software on the side, so if they write a little utility pro-

gram, IBM makes it available for free. (Let's I hope the programmer gets a raise out of it.)

We've mentioned EWS before, notably the popular Extended Desktop in "The Esther Utilities 2.0" (*OS/2 Magazine*, June 1995, pp. 47-52). Three other favorite EWS applications are GFC, PM Camera, and GPSCLOCK.

You can find all three of these programs in CompuServe's OS2USER forum Library 23. On the Internet, they're in *hobbes.nmsu.edu/os2* in the *ibm/ews* directory.

71 Use graphical file compare. GFC is a nifty graphical file-comparison utility. You load two files, and GFC displays a composite file, including a map of what moved or changed. If you have to compare two versions of a configuration file or other text file, this small program will be a serious time-saver. I find the graphical comparison map a little confusing, but at this price, I can live with it. The name of the downloadable file is *os2gfc.zip*.

72 Snap up PM camera. I take a lot of screen shots for articles, so I can justify the expense of a full-scale package such as Impos/2 or Open Shutter. If you need to capture screen images less often, PM Camera will do a more-than-adequate job. Its most useful graphic format is OS/2's native *.bmp*. PM Camera automatically rennumbers images, and it lets you control how much of the screen to capture at a time, so it may be all you ever need. The name of the downloadable file is *pmcam2.zip*.

73 It's time for a tiny clock. GPSCLOCK is an example of a tiny but useful EWS utility. It displays the current time in a small box on your screen. It's not earth-shattering, but when you want a clock, you want a clock. This one doesn't take up much real estate. The name of the downloadable file is *clocks.zip*.

74 Get the EWS catalog. Now that we've got you hooked, you should download the IBM Employee Written Software catalog for a list of dozens of great utilities free for the download—the latest edition has 76 programs listed.

You can find the EWS catalog in the places mentioned earlier. On CompuServe, the file is called *ewscat.zip*. On the Hobbes Internet archive, it's named *ewscat.text*.

75 Make a quick XIT. You can find free OS/2 software in addition to IBM's Employee Written Software, of course. One excellent utility is XIT, which adds a one-click "close application" to your OS/2 applications. Instead of pressing <Alt+F4> or choosing Close from a menu, simply click on the tiny x in the title bar. It sounds minor, but XIT grows on you.

You can find *xit10.zip* in CompuServe's OS2USER forum, Library 5. In the Internet, it's on *hobbes.nmsu.edu/os2* in the *wpsutil* directory.

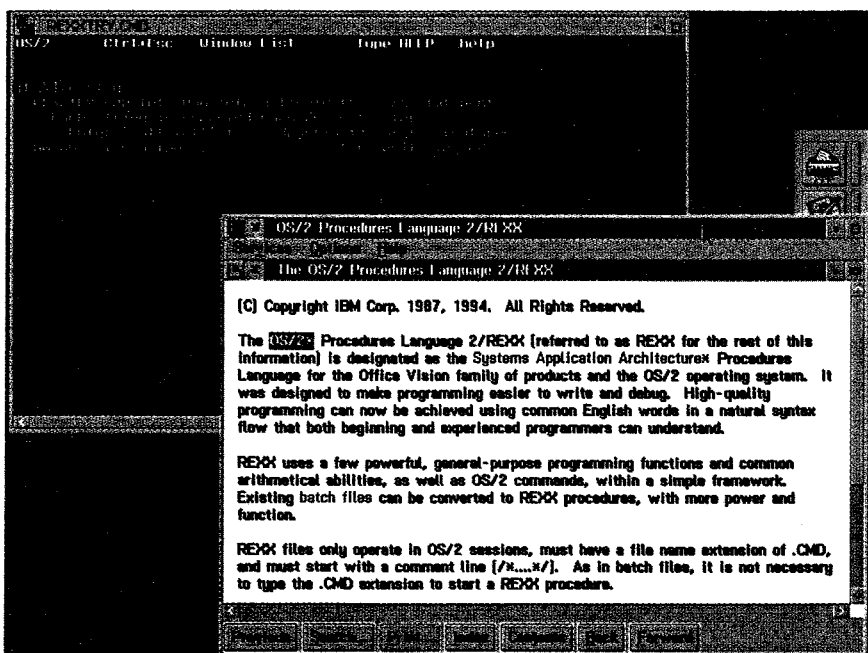
76 View bitmaps easily with FBMP. Most of us wind up with random files stuck in odd corners of the hard disk, whose names are about as identifiable as the Tupperware full of, er, something in the back of my refrigerator. If you find a rogue *.bmp* bitmap file, you'll find FBMP a quick command-line tool to view it. It's handy, and it's tiny. You can find *fbmp.zip* on the Internet in *hobbes.nmsu.edu/os2* in the *graphics* directory.

77 Zip your files. An essential set of utilities (so ubiquitous that

it's easy to forget about them) are the free ZIP and UNZIP utilities. If you've ever uploaded or downloaded a file from a BBS or online service, you've encountered zipped files, compressed files created by the computer industry's need to fit 10 pounds into a 5 pound bag. (Zipped files, identifiable by their *.zip* extensions, are based on PKWare's Zip file format. Other PC-based file compression schemes are available, but PKWare has created the *de facto* standard.) Once you acquire them, ZIP and UNZIP will go into your utilities directory, and never leave—unless an update comes out.

You can find both utilities in the self-extracting *unz512.exe* archive in CompuServe's OS2USER forum, Library 4. On the Internet, they're in two files, *unz512x1.exe* and *unz512x2.exe* in *hobbes.nmsu.edu/os2* in the *archiver* directory.

78 Know the UUcode. While you're on the Internet, two more free utilities are the native OS/2 versions of UUdecode and UUencode. These utilities help to convert and extract files to the popular uuencoded file format that allows binary files to be exchanged over the Internet either via mail or the binary Usenet newsgroups. You can find *ucode101.zip* on the Internet on *hobbes.nmsu.edu/os2* in the *archiver* directory.



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fusion about external REXX data queues results from the unfortunate choice to name the OS/2 RXQUEUE subcommand the same as the much older built-in RXQUEUE() function.

The RXQUEUE() built-in function is used within a REXX program to create and delete queues, to make a specific queue the active queue, and to get the name of the currently active queue. The OS/2 RXQUEUE subcommand is used to store data in a REXX data queue (either first-in, first-out or last-in, last-out) or to clear any data in a queue. RXQUEUE is external to any REXX program and can be run from a command line or as an external command from within a REXX program.

Each OS/2 session has, by default, a REXX external data queue named SESSION, which is private to that session. Only one data queue is active at any one time. You use the RXQUEUE() function to set the currently active queue. It is the programmer's responsibility to create, and hopefully delete, any other required queues. Any other queues can be referenced from any OS/2 session that knows the name of the queue. A REXX program can test a queue for the presence or absence of data using the QUEUED() function, which returns a Boolean value of 0 or 1 denoting the absence or presence of data. On other platforms, QUEUED() may return the number of lines of data currently in the queue. Therefore, it is a good idea to test the value returned by QUEUED() for a value of zero or greater than zero.

Data can be piped to a REXX data queue. For example, to place the output of a DIR command in a data queue you could use:

```
DIR *.* | RXQUEUE
```

However, since a DIR command can return an error message if there are no files that meet the file-mask criteria, it is also necessary to pipe the output of STDERR (the file handle that receives the error message). This can be accomplished with:

```
DIR *.* 2>&1 | RXQUEUE
```

where the 2 represents the file handle for STDERR and the 1 represents the file handle for STDOUT. This notation tells OS/2 that they are to be directed to the

same place. In this case, they will be piped to the RXQUEUE pipe or subcommand.

Miscellaneous REXX Tips by Dick Goran

84 Watch for the double-slash problem. REXX creates a tokenized format of your program if the tokenized format doesn't exist or if the tokenized format is older than the source program. The handy facility to tokenize the program only, without executing it, exists and can be specified with the characters //t following the program name on the command line.

This capability has resulted in an overall OS/2 problem. Since cmd.exe, the command interpreter, grabs anything following a double slash, it is currently impossible to pass any text string beginning with a double slash to a REXX program (or any other program for that matter) from the command line.

This presents a serious problem, since all Internet World Wide Web universal resource locators (URLs) except news contain a double slash, such as the WWW page <http://www.cfsrex.com>.

85 Fix the file-handle fix that didn't. OS/2 Warp contains a fix to OS/2 2.1 that caused numerous REXX programs to break. Namely, OS/2 2.1 with multimedia extensions (MMPM/2) installed changed the default number of file handles within each session from 15 to 80. OS/2 Warp restored the default value to 15.

If you have a program that opens numerous files and works fine under OS/2 2.1 but fails under OS/2 Warp, you may have bumped into IBM's fix.

First, the program should be corrected to close a file when it is through with it, thus releasing the file handle resource. In many cases, this might be all you need to do.

However, if you have a need to have more than 15 files open concurrently, your only choice is to resort to a third-party routine (or write your own C DLL) to increase the number of per-session file handles.

86 Learn to love the REXX exit message. There is no way to eliminate the "The REXX procedure has ended" message produced by PMREXX. This message is hard-coded into

PMREXX and is one of the reasons for PMREXX being disregarded by many REXX programmers.

87 For advanced math, use REXXMath. All arithmetic operations in REXX are handled internally within the interpreter and do not take advantage of an available math coprocessor. Therefore, if you have a need for complex computations in REXX, use a third-party package such as REXXMath. You'll find it in CompuServe's OS2DF1 forum, Library 7, as *rexma.zip*, and elsewhere as *rexmath.zip*.

88 One good pipe deserves another. If you are passing a command to the external environment of a REXX program, such as a DIR command, with the intent of either redirecting that command's output to a file or piping it to REXX, be sure to redirect or pipe the output of STDERR. For example:

```
'adir *.* 2>&1 | RXQUEUE'
```

89 Find REXX info on the Internet. When you want to know what is happening in the world of REXX or if you have REXX-related questions, here are some resources.

The father of REXX, Mike Cowlishaw, maintains a World Wide Web site on the Internet at <http://www2.hursley.ibm.com> that can lead you to other sources of REXX information.

Another new REXX site on the Internet is my own <http://www.cfsrex.com>. CompuServe's OS2DF1 forum, Section 6, and the Usenet's *comp.lang.rexx* newsgroup are other places to find quick answers to your questions.

Miscellaneous Tips

90 Bypass the Hobbes bottleneck. Arguably the best source of OS/2-related files is on the Hobbes ftp site, *hobbes.mnsu.edu*, under the /os2 directory tree. You can access this site using the FTP-PM program, or through WebExplorer as *ftp://hobbes.mnsu.edu/os2*. Unfortunately, the Hobbes site can currently support only 200 concurrent users, and that's simply not enough given OS/2 Warp's popularity.

You can use any one of four mirror sites instead of the official Hobbes sites; they have the same files, in the same locations:

boris.infomagic.com/pub/mirrors/Hobbes
cdrom.com/.4/os2
ftp.nectec.or.th/pub/mirrors/os2
ftp.pht.com/pub/os2/hobbes/os2

If you don't have Internet access, the alternative is to purchase the Hobbes archive CD-ROMs offered by Walnut Creek CDROM (510) 674-0783, fax (510) 674-0821, e-mail info@cdrom.com. Although affordable, these discs aren't as current as the instantly updated Hobbes Internet archives.

91 Check out some free EPM files. If you enjoy customizing the EPM, try the friendly Enhanced Editor or, if you'd like to learn more, download the macro source and EPM REXX examples. The files are called *epmmac.zip* and *epmrex.zip*, and they're in CompuServe's OS2USER forum, Library 23, or in the Internet Hobbes archive, *hobbes.nmsu.edu/os2* in the *ibm/epm* directory.

You can also find a few interesting EPM extensions online in Hobbes's editors directory, shown in Table 2. Bill Schindler

92 Using REXXTRY. There have probably been instances where you have wondered exactly what form the data returned by a function would be in. Perhaps you have wanted to do a quick calculation that caused you to write a one or two-line REXX program. The solution: use REXXTRY.

REXXTRY is actually *rexstry.cmd*, and is an interactive method of running and executing REXX statements from an OS/2 command line. Try it from a full-screen or Windows OS/2 prompt:

```
rexstry say( 2 * 3 )
```

REXXTRY will be launched and will interpret the instruction *say(2 * 3)* with the resulting answer 7 being displayed. Similarly, if you are not exactly sure what the form of the data returned by the **parse version** instruction is, launch REXXTRY and enter the following:

```
parse version x  
say x
```

and you will see the result:

```
REXXSAA 4.00 10 Feb 1994
```

Dick Goran

93 See the device drives with **<Alt+F2>**. After the power-on self test, and after you acknowledge the Boot Manager menu, you see a small white block and "OS/2" next to it in the upper left corner of the screen. When you see this, you can press **<Alt+F2>** to cause all of the device-driver load messages to appear and scroll on the screen.

Several releases ago, the OS/2 developers changed the default behavior of the system to not display all of the device-driver status messages. The only time the logo screen disappears is when a device driver displays a message or when the Workplace Shell desktop is about to paint itself. The device drivers shipped with OS/2 do not write any messages to the screen unless an error occurs or you use **<Alt+F2>**. David Reich

94 Get to the Settings Notebook faster. A shortcut to pulling up an object's Settings Notebook is to hold the **<Alt>** key down while double-clicking on the object whose Settings Notebook you want to work with. David Reich

95 Formatting FAT over to HPFS. To reformat a FAT disk partition as an HPFS partition, the command is:

```
FORMAT X: /FS:HPFS
```

where X is the drive you want to format. Likewise, if you have an HPFS drive that you want to reformat to FAT, type:

```
FORMAT X: /FS:FAT
```

If you don't enter the */fs:* parameter, the **format** program will default to reformatting the drive with the file system that is currently on the drive. If no file system is found (if you just repartitioned a physical drive, for example) and you do not specify a file system, **format** will assume you want FAT. If the disk partition contains data, don't forget to back it up first! David Reich

96 REXX function for directory testing. Neither the OS/2 REXX built-in functions nor the REXXUTIL external functions provide a single method to test for the presence or absence of a directory. Here's a function that you can save to a directory that is within your path:

```
/* ExistDir.CMD - Pseudo  
ExistDir Function */  
ExistDir:parse arg directory /*  
get directory name from caller */  
call SysFileTree directory,  
directory_stem, 'D' if  
directory_stem.0 = 1 then return  
1 return 0
```

Dick Goran

Windows 95 tips By Lou Miranda

If you believed all the hype surrounding Microsoft's Windows 95, you might think it can do everything that OS/2 Warp can do and more—especially when it's had three years to catch up. Peek below its snazzy interface, however, and you'll see that Windows 95 looks more like OS/2 Warp than acts like it. These tips, by the way, are based on the Windows 95 beta, not the final release (not yet out at press time).

97 Win95: Forget customizing individual folders. Surprising as it may sound, you can't customize

TABLE 2: THE HOBBS'S EDITOR'S DIRECTORY

epm_spel.zip
gcppgp10.zip
htmlmepm.zip
mlepmpm.zip

Some are in the *ibm/epm* directory:

epmbk.zip
epmmac.zip
epmrex.zip

And one is in the *ibm/ews* directory:

cstepm.zip

—Bill Schindler

Spell checker added to EPM editor

EPM Front End for OS/2 PGP 2.6.x

HTML extensions for EPM (version 0.95)

Hooks, highlighting, and more for EPM

Technical and user documentation

EPM macros

EPM REXX sample macros

Adds an actions menu

individual folders in Windows 95. In OS/2 Warp, simply pop-up the folder's menu and select Settings. On the first three pages, you can change the font, text color, and background color. Select the Background tab, and you can change the color or add a bitmap. You can even add menu items on the Menu page of the Settings Notebook.

Why would you want to customize? To really take advantage of OS/2 Warp's features, group your folders by project, instead of by application. For example, you might have a Home folder and a Work folder. The Home folder has data files for personal letters, finance, recipes, and such, and the Work folder has data files for task lists, spreadsheets, sales letters, and the like. You could then customize each of these two folders with a different background color and icon.

What about applications, such as most utilities, that don't have associated data files? Just add them to the popup menu for your Home or Work folder. For example, add your PIM to the menu for your Work folder, and DOOM to the menu for your Home folder.

98 Win95: Forget using Work Areas. You might also make your Home and Work folders into Work Area folders. This Settings Notebook option (under the File tab) will turn your folders into mini-desktops. Minimizing, closing, or opening your Home or Work folder will minimize, close, or open all the open documents in that folder. In the Settings Notebook for a folder, just select Work Area on the File tab.

99 Win95: Forget using the Light Table. Another neat folder trick that Windows 95 doesn't have is Light Tables. Just drag a light table template out of your Templates folder. Then, select a few multimedia files (.tiff, .gif, .bmp, .wav, .midi, or .avi files work great) and select Create LT Reference from the popup menu.

Open the Light Table and you'll see thumbnail images. Double-click on an image to open it up, or double-click on the slide frame surrounding each image to get a quick view with OS/2 Warp's multimedia viewer.

100 Win95: Forget document-centric computing. Micro-soft touts Windows 95's document-cen-

tric capabilities, but OS/2 Warp far outshines it here too. For example, once you tell Windows 95 to associate a file type with an application (for example, *.bat would be associated with *command.com*), you can't use the popup menu to open that file with any other application.

How does OS/2 Warp make it easier? Let's say you want to run *setup.bat*. In either OS/2 Warp or Windows 95, you can simply double-click on the icon. But what if you want to edit *setup.bat*? You can't, directly, in Windows 95. In OS/2 Warp, right-click to bring up the menu, then select Open System Editor. In fact, you can make as many associations as you like.

101 Win95: Forget evolving past file extensions. Windows 95 only lets you associate applications and data by referring to their three-letter file extension. OS/2 Warp's Extended Attributes (EAs) allow you to define files as a certain type no matter what you name them.

For example, you can name an IBM Works document anything you want—

with any extension you want—because it has an EA that tells OS/2 Warp that it's an IBM Works document.

102 Win95: Forget searching by file comment. OS/2 Warp's Extended Attributes also give you the ability to attach notes and keywords to a file. Open the Settings Notebook for any file. Choose the File tab, then move to page 3. Enter some comments and keywords, then close it. If you ever need to find that file, you can use the Find option on any folder's popup menu to search by comments or keyword.

103 Boot Windows 95 under OS/2 Warp. Everyone except Microsoft admits that Windows 95's text mode is really just plain good DOS. And just to show yourself how much like DOS it really is, try this: Take a Windows 95 boot disk and place it in drive *a:* on a PC running OS/2 Warp. Now double-click on the DOS From Drive A: icon in the Command Prompts folder. You guessed it: Windows 95 text mode appears.

They'll work for tips.

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